

WHAT IS CLAIMED IS:

1. An apparatus for interaction between a plurality of users in a three-dimensional, computer-generated graphical space, comprising:

- a plurality of client processes, wherein each client process is executed on a digital computer distinct from the digital computers executing others of the plurality of client processes;
- a central server process, executed by a server computer;
- a network coupling the server computer to the digital computers which execute the plurality of client processes, thereby coupling the plurality of client processes with the central server process;
- a plurality of user objects, executed as subprocesses of the central server process, wherein each of the plurality of user objects is associated with a user in the plurality of users;
- an environment database, accessible by each client process;
- means for communicating a position of a particular user in the three-dimensional, computer-generated graphical space from the particular user's client process to the other client processes via the central server process, the means for communicating programmed according to a protocol;
- means, on a digital computer executing the particular user's client process, for receiving positions of the users of the other client processes according to the protocol via the central server process;
- and means, on the digital computer executing the particular user's client process, for rendering a three-dimensional view from a viewpoint of the location of the particular user, the rendered view including at least one object from the environment database and, when other users are at locations viewable from the rendered viewpoint, including those other viewable users.

1 The apparatus of claim 1, wherein the
2 environment database comprises a single central environment
3 database.

1 3. The apparatus of claim 1, wherein the
2 environment database comprises one copy of the environment
3 data at each of the plurality of client digital computers.

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100